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Claims

1. A tubular prosthesis device for use within the body comprised of a metal filament material formed of a metal outer member of extended length having an exposed outer surface, and

a core within said extended outer member comprising a different metal than said outer member, said core being secured within and substantially enclosed by said outer member,

said device being capable of reduction to a small size for introduction into said body lumen and expandable to a sufficiently large size to engage the wall of said body lumen.

2. The device of claim 1 wherein said outer member and core are constructed such that said endoprosthesis is elastic and capable of radial reduction in size without plastic deformation to said small size for introduction to the body and self-expandable by an internal elastic self-restoring force to said large size for engaging said wall of said lumen.

3. The device of claim 1 wherein said outer member and core are such that the endoprosthesis is plastically deformable and formed into said small size for introduction into the body and expandable by plastic deformation to said large size for engaging the wall of said lumen.

4. The device of claim 2 or 3 wherein said device is formed into said tubular shape by knitting into loosely interlocked loops of said filament.

5. The device of any one of claims 1, 2 or 3 wherein said metal of said core has a density greater than said metal of said outer member of said device.

6. The device of claim 5 wherein said cross sectional dimension of said filament is about 0.015 inch or less.

7. The device of claim 6 wherein said cross-sectional dimension of said filament is about 0.006 to about 0.0045 inch and said core has across-sectional dimension of about 0.0014 to about 0.00195 inch.

8. The device of claim 7 wherein said core has a density of about 9.9 g/cc or greater.

9. The device of claim 8 wherein said core is selected form the group consisting of tungsten, tantalum, rhenium, iridium, silver, gold, bismuth and platinum.

10. The device of claim 9 wherein said outer member is selected from superelastic alloys and precursors of superelastic alloys and stainless steel.

11. The device of claim 10 wherein said outer member is nitinol.

12. The device of claim 11 wherein said core is tantalum.

13. A self-expanding tubular prosthesis device for use within the body comprised of loosely interlocked knitted loops of a metal filament material formed of an elastic

material capable of deflection without plastic deformation to produce a self-restoring force, said filament material comprising an elastic metal outer member of extended length and an exposed outer surface, and

a core comprising a different metal than said outer member, said core being secured within and substantially enclosed by said outer member,

said device being capable of reduction to a small size for introduction into said body lumen and expandable by said internal restoring force to a sufficiently large size to engage the wall of said body lumen.

14. The device of claim 13 wherein said core is about 1 to 40% of said of the cross-sectional dimension of said filament.

15. The device of claim 14 wherein said core is about 25% or more of said cross-sectional dimension.

16. The device of claim 15 wherein said core is about 33% of said cross-sectional dimension.

17. The device of claim 14 wherein said core has a modulus of elasticity of about 500 GPa or less.

18. The device of claim 15 wherein said core has a modulus of elasticity of about 200 GPa or less.

19. The device of claim 14 wherein said core has a density of about 9.9 g/cc or greater.

20. The device of claim 19 wherein said core is selected form the group consisting of tungsten, tantalum, rhenium, iridium, silver, gold, bismuth and platinum.

21. The device of claim 20 wherein said outer member is selected from the group consisting of superelastic alloys and precursors of superelastic alloys and stainless steel.

22. The device of claim 21 wherein said outer member is nitinol.

23. The device of claim 22 wherein said core is tantalum.

24. The device of claim 13 or 23 wherein said cross sectional dimension of said filament is about 0.015 inch or less.

25. A medical stent device capable of placement or manipulation in the body by means external of the body under guidance of a fluoroscope, said device comprised at least in part of an elongated filament-form metal member adapted to be subjected to elastic deformation to enable the device to be forced into a characteristic deformed configuration during a stage of use and to elastically self-recover from said deformation when deformation forces are relieved, said filament-form metal member comprised of a core of a first metal of a first selected thickness and an intimately surrounding sheath of a second selected metal of a second thickness, said first metal being a high density metal that demonstrates characteristic relatively high radiopacity and said second metal being a lower density metal having

substantially more elasticity than said first metal, the combined effect of the selected thicknesses of said first and second metals in said filament-form member serving to enhance the radio-opacity of said filament-form member to provide improved fluoroscopic or x-ray visualization of said filament-form member in the body while imparting sufficient elasticity to enable the filament-form member to elastically self-recover from its characteristic deformed configuration.

26. The medical device of claim 25 wherein said filament-form metal member comprises a draw-form.

27. The medical device of claim 26 wherein said second metal is nitinol.

28. The medical device of claim 27 wherein said high density metal is tantalum.

29. A tubular endoprosthesis device for use within the body comprised of a metal member formed in tubular shape, wherein said metal member has a cross-sectional thickness of about 0.015 inch or less and is composed of at least two different metals, including an exposed outer metal having select mechanical properties and an inner metal encompassed within said outer metal, said inner metal having a relatively high density compared to said outer metal for enhancing the radiopacity of said endoprosthesis.

30. The tubular prosthesis device of claim 29 wherein said metal member has a cross-sectional thickness of about 0.0075 inch or less.